

ABSTRACT

The present disclosure provides methods for enhancing the response of a patient's immune system to vaccination. This is accomplished by reactivating the thymus. Optionally, hematopoietic stem cells, autologous, syngeneic, allogeneic or xenogeneic, are delivered to  
5 increase the speed of regeneration of the patient's immune system. In one embodiment the hematopoietic stem cells are CD34<sup>+</sup>. The patient's thymus is reactivated by disruption of sex steroid mediated signaling to the thymus. In one embodiment, this disruption is created by administration of LHRH agonists, LHRH antagonists, anti-LHRH receptor antibodies, anti-LHRH vaccines or combinations thereof.

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